

# Getting your Feet Wet with (Semantic) MediaWiki. A Hands-on Tutorial.

Tutorial Day  
SMWCon Fall 2013  
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- MediaWiki
  - Incl. Hands-on
- MediaWiki deficits and how SMW overcomes them
- Coffee

Break
- Semantic MediaWiki – Creating Data
  - Incl. Hands-on
- Semantic MediaWiki–Retrieving Data
  - Incl. Hands-on

# About these slides ...

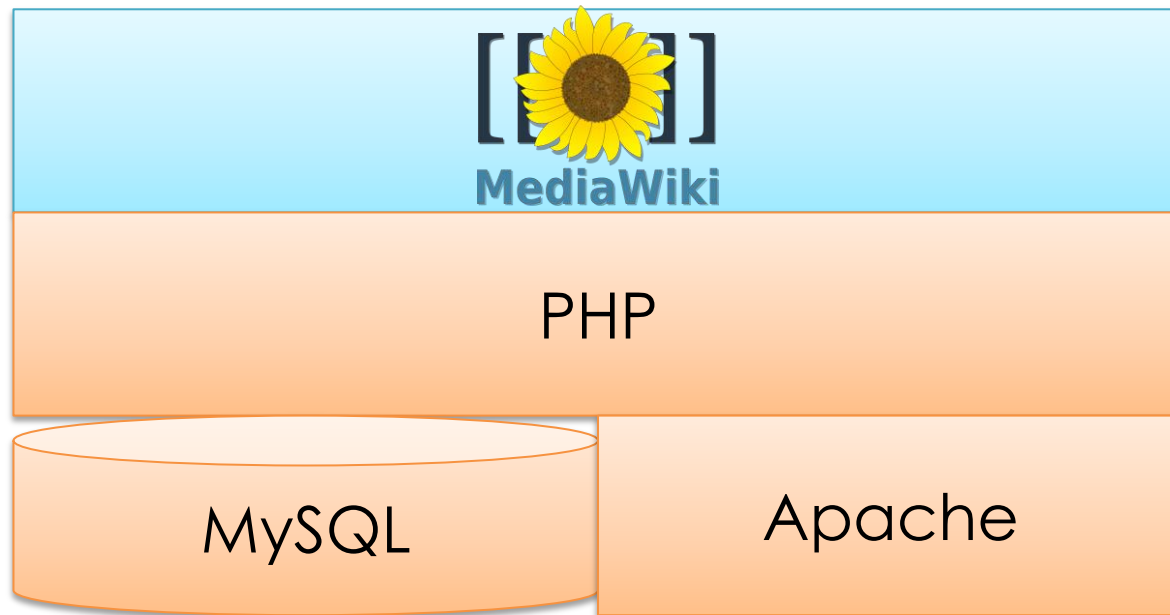
- These slides have been presented at SMWCon Fall 2013 as part of a 150 min introductory level tutorial.
- They are partly based on the presentation “Introduction to Semantic MediaWiki” given by Markus Krötzsch at the SMWcon Fall 2012.

- Bring your own laptop
- Log on to

<https://test.wikixl.nl/wiki/smwcon1/>

- **MediaWiki**
  - Wiki pages
  - Links
  - Wiki markup
  - Namespaces
  - Templates and transclusion
  - **Magic words and parser functions and parser tags**
- MediaWiki deficits and how SMW overcomes them
- Semantic MediaWiki – Creating Data
  - Incl. Hands-on
- Semantic MediaWiki–Retrieving Data
  - Incl. Hands-on

- Wiki engine for managing hypertext
- Very popular
  - Wikipedia, Wikia, >100,000 sites
- User interface in hundreds of languages
- Free, Open Source, open development
  - Some full-time developers (Wikimedia staff)
- Written in PHP and JavaScript, main DB MySQL



# What is Semantic Media Wiki (SMW)?

It's a content management system for

- Richly formatted hypertext documents
- Structured data

It's based on the "Wiki Way":

- User-governed
- Collaborative
- Easy to use



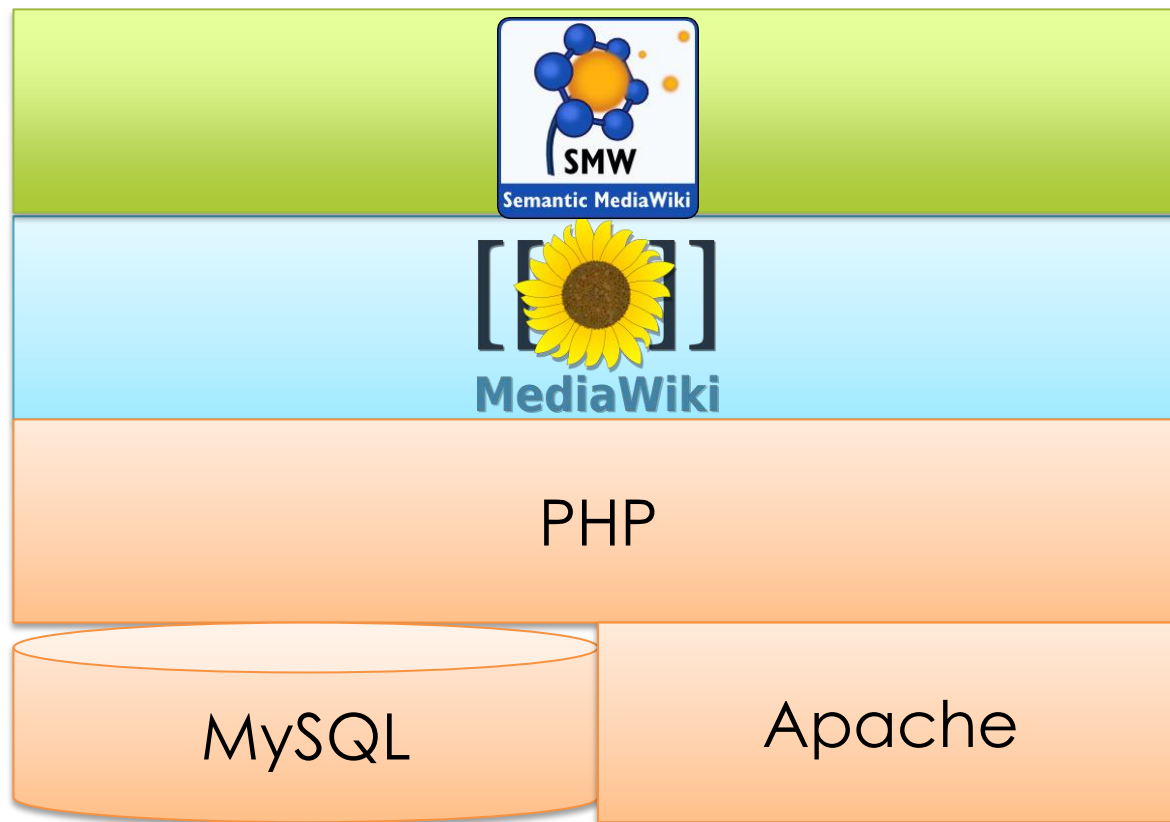
It's implemented as a MediaWiki extension:

- Modular add-on
  - Fully compatible with current and recent MW
- Free, Open Source, open development
  - Driven by volunteers: no staff
  - Integrated with MW development
  - Current maintainers: Markus Krötzsch, Jeroen De Dauw
- Written in PHP and JavaScript, main DB MySQL
  - RDF DBs supported as secondary storage

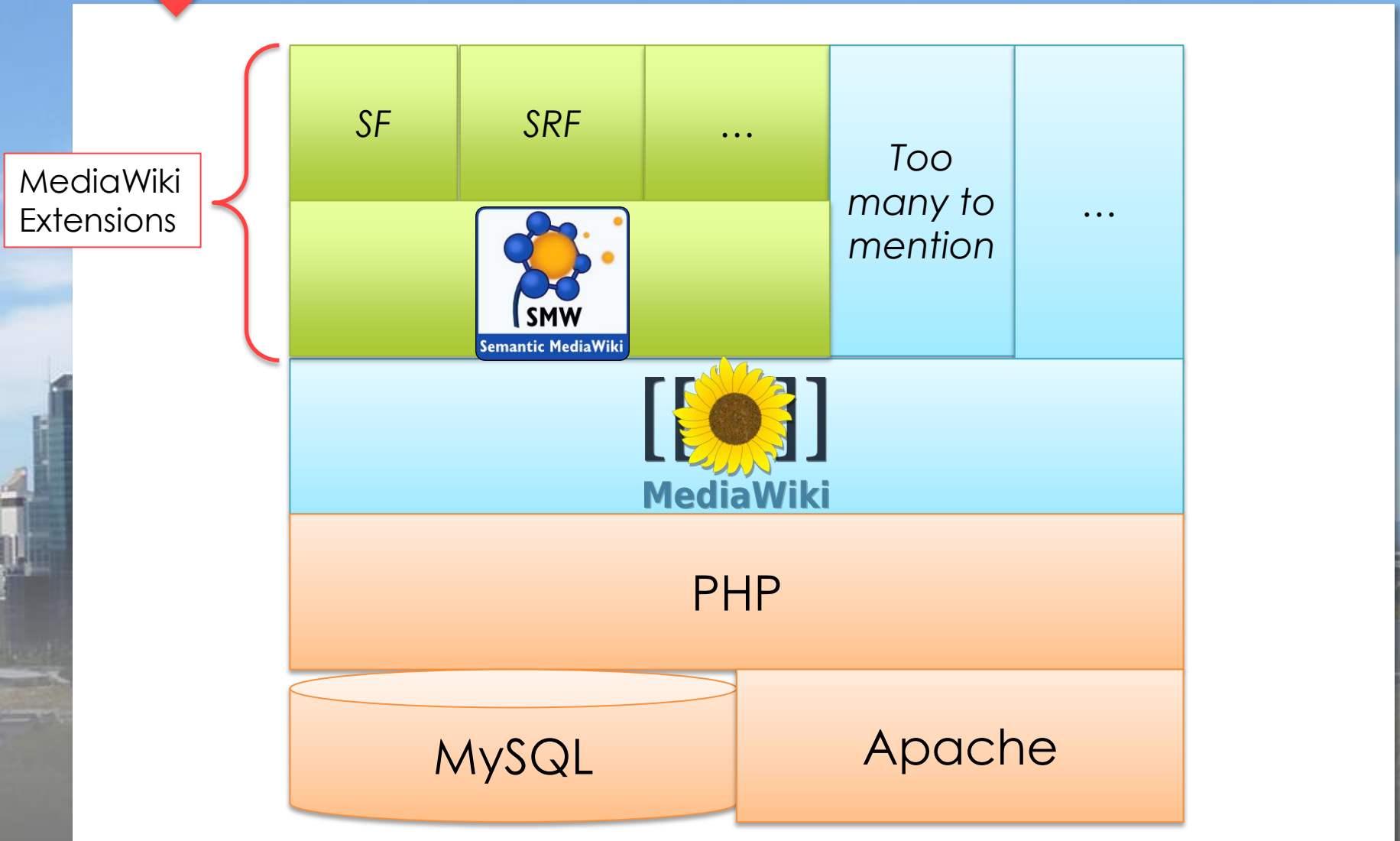
# What is Semantic Media Wiki (SMW)?

- Created in 2005
- Used on hundreds of sites (impossible to count)
- One of the biggest MW extensions
  - Code, people, commit activity, user community
- Extensive documentation in many languages
  - <http://semantic-mediawiki.org/>
- Twice-yearly user conference SMWCon
- Organisational support by [OSDA](#) (charity)

# Architecture



# Architecture





**WIKIPEDIA**  
The Free Encyclopedia

Main page  
Contents  
Featured content  
Current events  
Random article  
Donate to Wikipedia

Interaction  
Help  
About Wikipedia  
Community portal  
Recent changes  
Contact page

Toolbox  
Print/export

Languages

Acèh  
Адыгэбзэ  
Afrikaans  
Akan  
Alemannisch  
አማርኛ  
Ænglisc  
Аӕрсаа  
العربية  
Aragonés  
Armãneashtce  
Arpetan  
Asturianu  
Avañe'ẽ  
Aymar aru  
Azərbaycanca  
বাংলা  
Bân-lâm-gú  
Башҡортса  
Беларуская  
Беларуская (тарашкевіца)

Article Talk

Read Edit View history

Search

# Berlin

From Wikipedia, the free encyclopedia

Coordinates: 52°31'N 13°23'E

*This article is about the capital of Germany. For other uses, see [Berlin \(disambiguation\)](#).*

**Berlin** (/bərˈlɪn/; German pronunciation: [bɛʁˈliːn] (listen (help·listen)) is the capital city of Germany and one of the 16 states of Germany. With a population of 3.3 million people,<sup>[1]</sup> Berlin is Germany's largest city and is the second most populous city proper and the seventh most populous urban area in the European Union.<sup>[4]</sup> Located in northeastern Germany on the River Spree, it is the center of the Berlin-Brandenburg Metropolitan Region, which has about 4½ million residents from over 180 nations.<sup>[5][6][7][8]</sup> Due to its location in the European Plain, Berlin is influenced by a temperate seasonal climate. Around one third of the city's area is composed of forests, parks, gardens, rivers and lakes.<sup>[9]</sup>

First documented in the 13th century, Berlin was the capital of the Kingdom of Prussia (1701–1918), the German Empire (1871–1918), the Weimar Republic (1919–33) and the Third Reich (1933–45).<sup>[10]</sup> Berlin in the 1920s was the third largest municipality in the world.<sup>[11]</sup> After World War II, the city, along with the German state, was divided - into East Berlin — capital of the German Democratic Republic, colloquially identified in English as East Germany — and West Berlin, a political exclave (surrounded by the Berlin Wall from 1961 to 1989)<sup>[12]</sup> and a *de facto* (although not *de jure*) state of the Federal Republic of Germany, known colloquially in English as West Germany from 1949 to 1990. Following German reunification in 1990, the city was once more designated as the capital of all Germany.

Berlin is a world city of culture, politics, media, and science, hosting 147 foreign embassies.<sup>[13][14][15][16][17]</sup> Its economy is primarily based on high-tech industries and the service sector, encompassing a diverse range of creative industries, research facilities, media corporations, and convention venues. Berlin also serves as a continental hub for air and rail transport<sup>[18][19]</sup> and is a popular tourist destination.<sup>[20]</sup> Significant industries include IT, pharmaceuticals, biomedical engineering, biotechnology, electronics, traffic engineering, and renewable energy.

Berlin is home to renowned universities, research institutes, orchestras, museums, and celebrities and is host to many sporting events.<sup>[21]</sup> Its urban setting and historical legacy have made it a popular location for international film productions.<sup>[22]</sup> The city is well known for its festivals, diverse architecture, nightlife, contemporary arts, public transportation networks, and an extremely high quality of living.<sup>[23]</sup>

## Contents [hide]

- Etymology
- History
  - 12th to 16th centuries
  - 17th to 19th centuries
  - 20th century
- Geography
  - Climate
  - Cityscape
  - Architecture
  - Gallery of Berlin sights and attractions
- Politics
  - Capital city
  - City state
  - Boroughs
  - Twin towns – Sister cities
- Economy
  - Companies

## Berlin

### State of Germany



Clockwise: Charlottenburg Palace, Fernsehturm Berlin, Reichstag building, Berlin Cathedral, Alte Nationalgalerie, Potsdamer Platz and Brandenburg Gate.



Flag



Coat of arms



Location within European Union and Germany

Coordinates: 52°31'N 13°23'E

## Editing Berlin



**You are not logged in.** Your IP address will be publicly visible if you make any edits. If you [log in](#) or [create an account](#), your edits will be attributed to a user name, among other benefits.

Content that *violates any copyrights* will be deleted. Encyclopedic content must be *verifiable*. Work submitted to Wikipedia can be edited, used, and redistributed—by anyone—subject to *certain terms and conditions*.

**B** **I** **T** **Advanced** **Special characters** **Help** **Cite**

'''Berlin''' {{IPA-de|bəˈʁɪn|l|ɪ|n}} {{IPA-de|bəˈʁɪn|-|de-Berlin.ogg}} is the [[Capital of Germany|capital]] city of [[Germany]] and one of the 16 [[states of Germany]]. With a population of 3.6 million people, <ref name="Population11"/> Berlin is Germany's largest city and is the second [[Largest cities of the European Union by population within city limits|most populous city proper]] and the seventh [[Largest cities of the European Union by population within city limits|most populous urban area]] in the [[European Union]]. <ref name="Insee - -" /> <cite web|url=http://www.insee.fr/fr/themes/tableau.asp?ref\_id=cmp1er01103&id=18|title=Population des villes et unités urbaines de plus de 1 million d'habitants de l'Union européenne|author=[[INSEE]]|accessdate=17 August 2008|language=French|> Located in northeastern Germany on the River [[Spree]], it is the center of the [[Berlin/Brandenburg Metropolitan Region|Berlin-Brandenburg Metropolitan Region]], which has about 4½ million residents from over 100 nations .... Due to its location in the [[European Plain]], Berlin is influenced by a [[temperate]] seasonal climate. Around one third of the city's area is composed of forests, parks, gardens, rivers and lakes. <ref>{{Cite book|url=http://books.google.de/books?id=94LP4xCb-KcC&pg=PA23&lpg=PA23&dq=%22Berlin+%22+rivers+lakes+forests+%22+one+third%22&source=bl&ots=OoT9TA0ZWR&sig=ZN0MSyam430C5321qPitypjubUg&hl=en&ei=VWTPStrdKabEmwPdx9yEAW&sa=X&oi=book\_result&ct=result&resnum=1#v=onepage&q&lr=false|title=Gren Berlin|work=[[Lonely Planet]]|accessdate=9 October 2009|>

First documented in the 12th century, Berlin was the capital of the [[Kingdom of Prussia]] (1701–1918), the [[German Empire]] (1871–1918), the [[Weimar Republic]] (1919–33) and the [[Third Reich]] (1933–45). <ref>{{cite web|url=http://www.fordham.edu/halsall/mod/germanunification.html|title=Documents of German Unification, 1848–1871|work=Modern History Sourcebook|accessdate=18 August 2008|> [[1920s Berlin|Berlin in the 1920s]] was the third largest municipality in the world. <ref>{{cite web|url=http://www.h-net.org/reviews/showrev.php?id=23505|title=Topographies of Class: Modern Architecture and Mass Society in Weimar Berlin (Social History, Popular Culture, and Politics in Germany).|work=www.h-net.org|accessdate=9 October 2009|> After [[World War II]], the city, along

Insert

— ° ' ≈ ≠ ≤ ± − × ÷ ← → · § **Cite your sources:** <ref></ref>

- Wiki pages are formatted hypertext documents
- “Wikitext” input converted to HTML output:

```
[[Link to wiki-page]]
[[Some Link|with custom text]]
[http://example.org Link to an outside URL]
==Header 1==
===Header 2=== (etc.)
''italics''
'''bold'''
* bulleted list
# numbered list
: indentation
; definition
```

<http://www.mediawiki.org/wiki/Help:Formatting>

- Page names consist of multiple parts:
  - **Namespace**:**Title**/**Subpagetitle**
- Examples:
  - **User:Denny/Tests**
  - **Berlin**
  - **Talk:Berlin**
  - **2001: A Space Odyssey**
  - **Std::out**
  - **/dev/null**

- Page names consist of multiple parts:
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  - **Std::out**
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- Create a page with this title:
  - <Firstname>\_<Lastname>
- Enter some text about yourself:
  - Name, employer, job description, place and date of birth, where do you live, name of your pet, name of your hotel in Berlin, ...
- Also play with the different layout options provided by the editor's toolbar.
  - Headings, text styles, lists
- Save your edits regularly.

- Rich set of features for controlling content display
- Some HTML tags are allowed
  - `<code>`, `<div>`, `<span>` and `<font>`
  - `<sub>`, `<br>`

[http://www.mediawiki.org/wiki/Help:Formatting#HTML\\_tags](http://www.mediawiki.org/wiki/Help:Formatting#HTML_tags)

- Advanced formatting elements:
  - Images
  - Tables

<http://www.mediawiki.org/wiki/Help:Images>

<http://www.mediawiki.org/wiki/Help:Tables>

```

{| class="wikitable"
! Heading 1
! Heading2
! Heading3
|-
| Cell 11
| style="color: blue" | Cell 12
| Cell 13
|-
| Cell 21
| style="background-color: yellow;" |
* bullet A
* bullet B
* bullet C
| Cell 23
|-
|}

```

Heading 1	Heading2	Heading3
Cell 11	Cell 12	Cell 13
Cell 21	<ul style="list-style-type: none"> <li>bullet A</li> <li>bullet B</li> <li>bullet C</li> </ul>	Cell 23

- Preferred way to organise pages in MediaWiki
- “Links” to Category pages mean: “page is in category”
  - Example: [[Category:City]] on page of Berlin
- Categories can be described by pages
- Category “Links” on Category pages mean: “page is subcategory of”
  - Example: [[Category:Settlement]] on Category:City
- Category “hierarchy” can be any graph (multi-inheritance, cycles, ...)
- Used for browsing, but not for search

- **Transclusion:**
  - Insert the content of one page into another
- **Parameters** can be given:
  - Use given values to substitute place holders in transcluded page
- Wikitext to transclude a page with parameters:
 

```
{{Page to transclude|parameter1=value1| ... }}
```

(By default "Template:" namespace is assumed)
- Wikitext for place holders within the template page:
 

```
{{{parameter1}}}
```

 or by number 

```
{{{1}}}
```

- Change your wiki page to use this template:
  - `{{Welcome|<Firstname>|<Lastname>}}`
- Add a Category annotation using one of these categories!
  - “SMW Novice”
  - “SMW User”
  - “SMW Expert”
- Go to the respective category pages to see who is what!
- Go to the category page for “SMWCon Participant” and figure out why you are listed there!

- Behaviour switches:
  - control some page effects
  - **\_\_TOC\_\_**, **NOTOC\_\_**, **\_\_FORCETOC\_\_**,  
**\_\_SHOWFACTBOX\_\_** (SMW)
- Variables:
  - insert some data into wikitext
  - **{{ PAGENAME }}**, **{{ FULLPAGENAME }}**,  
**{{ CURRENTDAY }}**

[http://www.mediawiki.org/wiki/Help:Magic\\_words](http://www.mediawiki.org/wiki/Help:Magic_words)

- Special syntax elements with hard-coded functionality
- Without parameter:
  - `{{#function}}`
- With parameter:
  - `{{#function:param1|param2 |...}}`
- E.g.
  - `#if`
  - `#ifeq`
  - `#switch`
  - `#replace`
- Many extensions define addtl. tags.

```

{{{Firstname}}} {{{Lastname}}}}
{{#if {{{age|}}}}
    | ({{{age}}})
    |
}}}
```

[http://www.mediawiki.org/wiki/Help:Magic\\_words#Parser\\_functions](http://www.mediawiki.org/wiki/Help:Magic_words#Parser_functions)

<http://www.mediawiki.org/wiki/Help:Extension:ParserFunctions>

- Parser tags
  - hard-coded functionality
  - look like HTML or XML tags
  - Enclosed in pointy brackets: < >
- Eg.
  - <nowiki> ... </nowiki>
  - <noinclude> ... </noinclude>
  - <includeonly> ... </includeonly>
- Many extensions define addtl. tags.

- The “Special:” namespace is special.
- It's pages cannot be edited. They are programmed with fixed functionality.
- E.g.
  - Special:Version
  - Special:AllPages
  - Special:Search
  - Special:UserLogin
  - Special:RecentChanges
  - Special:SpecialPages

- MediaWiki
- **MediaWiki deficits and how SMW overcomes them**
  - **Making data explicit**
  - **From many manual lists to queries**
- Semantic MediaWiki – Creating Data
  - Incl. Hands-on
- Semantic MediaWiki–Retrieving Data
  - Incl. Hands-on

- Wikipedia has articles about...
  - ... all cities
  - ... their populations
  - ... their mayors

So can I ask for a list of the world's ten largest cities with a female mayor?

# Search



From Wikipedia, the free encyclopedia

You searched for **What are the ten largest cities with a female mayor?** [\[Index\]](#)

For more information about searching Wikipedia, see [Wikipedia:Searching](#).

**There is no page titled "What are the ten largest cities with a female mayor?".**

**Results 1-20 of 345**

**1** 2 3 4 5 6 7 8 9 10 11 [Next](#) »

- [Manhattan](#)  
Relevance: 100.0% - -
- [Chicago](#)  
Relevance: 99.5% - -
- [Washington, D.C.](#)  
Relevance: 97.7% - -
- [St. Louis, Missouri](#)  
Relevance: 97.6% - -

- Wikipedia has a lot of **lists** of pages
- They are all **manually** maintained
- Resulting in
  - duplicate work,
  - **redundancies** and
  - potential **inconsistencies**.
- Though, no list of large cities with female mayors, nor a list of host cities of the Pachisie world championships, ...



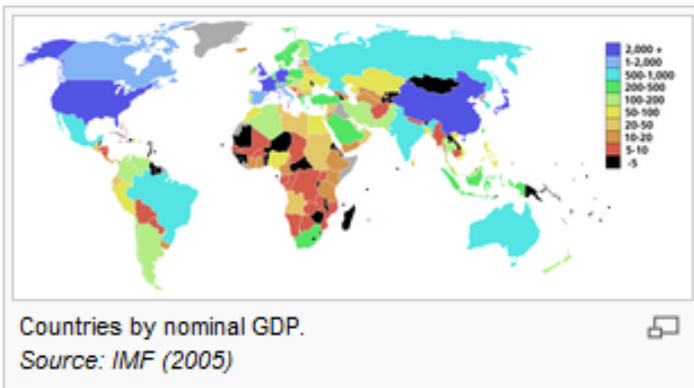
# List of countries by GDP (nominal)

From Wikipedia, the free encyclopedia

This article includes a **list of countries of the world sorted by their gross domestic product (GDP)**, the value of all final goods and services produced within a nation in a given year. The GDP dollar estimates presented here are calculated at market or government official exchange rates.

The table below includes data for the year **2005** for all 181 members of the **International Monetary Fund**, for which information is available. **Data are in millions of current United States dollars.**

It should be noted these figures do not include [Somalia](#), [Cuba](#), [North Korea](#), [Iraq](#), and several small states in Europe ([Andorra](#), [Monaco](#), [San Marino](#), [Liechtenstein](#), [Vatican City](#), [Greenland](#)) and the Pacific ([Palau](#), [Marshall Islands](#), [Micronesia](#), [Nauru](#) and [Tuvalu](#)).



Rank	Country	GDP (millions of USD)
—	<i><a href="#">World</a></i>	<b>44,454,843</b>
—	<i><a href="#">European Union</a></i>	13,502,800
1	<a href="#">United States</a>	12,455,825
2	<a href="#">Japan</a>	4,567,441
3	<a href="#">Germany</a>	2,791,737
4	<a href="#">People's Republic of China</a> <sup>2</sup>	2,234,133
5	<a href="#">United Kingdom</a>	2,229,472
6	<a href="#">France</a>	2,126,719
7	<a href="#">Italy</a>	1,765,537



# List of countries by GDP (nominal) per capita

From Wikipedia, the free encyclopedia

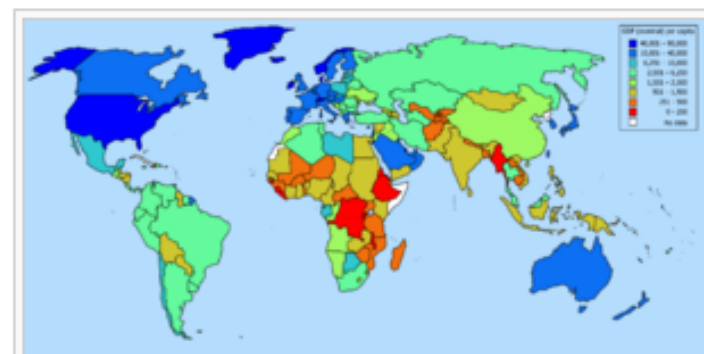
This article includes a **list of countries of the world sorted by their Gross Domestic Product (nominal) per capita**, the value of all final goods and services produced within a nation in a given year, divided by the average population for the same year.


The figures presented here do not take into account differences in the cost of living in different countries, and the results can vary greatly from one year to another based on fluctuations in the [exchange rates](#) of the country's [currency](#). Such fluctuations may change a country's ranking a great deal from one year to the next, even though they often make little or no difference to the standard of living of its population. Therefore these figures should be used with caution.

Comparisons of national wealth are also frequently made on the basis of [purchasing power parity](#) (PPP), to adjust for differences in the cost of living in different countries (See [List of countries by GDP \(PPP\) per capita](#)). PPP largely removes the exchange rate problem, but has its own drawbacks. It does not reflect the value of economic output in international trade, and it also requires more estimation than GDP per capita. On the whole PPP per capita figures are more narrowly spread than GDP per capita figures.

Great care should be taken when using either set of figures to compare the wealth of two countries. Often people who wish to promote or denigrate a country will use the figure that suits their case best and ignore the other one, which may be substantially different, but a valid comparison of two economies should take both rankings into account, as well as utilising other economic data to put an economy in context.

The table below includes data for the year [2005](#) for all 180 members of the [International Monetary Fund](#), for which information is available. Data are in [United States dollars](#).



Map of countries by GDP (nominal) per capita. Source:  IMF (2005)

Rank	Country	GDP per capita
1	<a href="#">Luxembourg</a>	80,288
2	<a href="#">Norway</a>	64,193



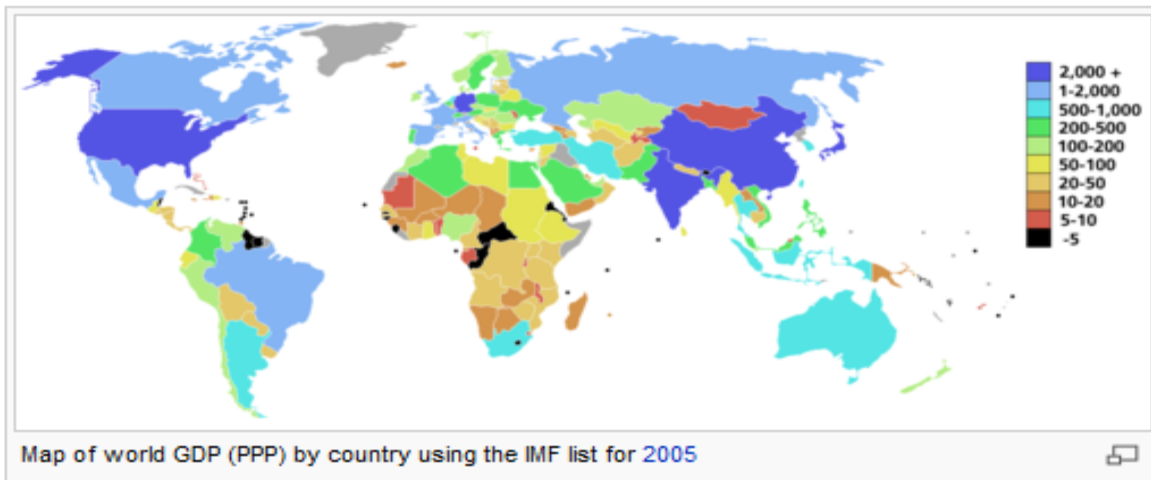
Top 20  
nominal GDP  
per capita



# List of countries by GDP (PPP)

From Wikipedia, the free encyclopedia

There are three **lists of countries of the world sorted by their gross domestic product (GDP)** (the value of all final goods and services produced within a nation in a given year). The GDP dollar estimates given on this page are derived from **Purchasing Power Parity (PPP)** calculations. Using a PPP basis is arguably more useful when comparing differences in living standards because PPP takes into account the relative cost of living and the inflation rates of the countries, rather than using just exchange rates which may distort the real differences in income. The **Market Exchange Rate (MER)** GDP is more useful for understanding the international economic purchasing power and the total value of tradeable goods and services of different countries.



- The first table includes data for the year 2005 for all 180 members of the **International Monetary Fund**, excluding **East Timor** for which information is not available, and the unranked entities: **world** and **European Union**. Data is in millions of **international dollars** and is calculated by the **International Monetary Fund**.
- The second table shows 162 national entities as well as figures for the **European Union** and the World. This list was compiled by the World Bank. Data is for the year 2005, with figures in millions of **international dollars**.
- The third table is a tabulation of the **CIA World Factbook** data update of April 2006, according to the data provided by the **CIA**. Figures are estimates in millions of international dollars, for various years ranging from 1993 to 2005 (most figures are however for the year 2005).

## List by the International Monetary Fund

## List by the World Bank

## List by the CIA World Factbook

Rank	Country	GDP (PPP) \$m
—	<b>World</b>	61,027,505
—	<b>European Union</b>	12,427,413
1	<b>United States</b>	12,277,583

Rank	Country	GDP (PPP) \$m
—	<b>World</b>	61,006,604
—	<b>European Union</b>	12,626,921
1	<b>United States</b>	12,409,465

Rank	Country	GDP (PPP) \$m
—	<b>World</b>	60,630,000
1	<b>United States</b>	12,310,000
—	<b>European Union</b>	12,180,000

Die Listenkategorien sind Metakategorien und dienen lediglich zur Verwaltung der Listen, nicht zur thematischen Feinsortierung. Zur genaueren Zuordnung sind die Listen wie Artikel in die entsprechenden Themenhauptkategorien einzutragen.

Für die thematische Sortierung lassen sich Listen über das [CatScan-Tool](#) nach Themenkategorien suchen.

Bitte die Listen nicht unter "L", sondern mit Hilfe einer Pipe unter dem jeweiligen Stichwort einordnen, zum Beispiel eine "Liste bekannter Philosophen" mit

- [[Kategorie:Liste|Philosophen]]

Ist eine Liste unterteilt in mehrere Unterlisten (z. B. [Liste der Seen in Deutschland](#) in Unterlisten nach Anfangsbuchstabe), so kommt nur die Hauptliste in eine "Kategorie:Liste (Thema)", alle Unterlisten dagegen in die [Kategorie:Themen](#).

Zu Listen allgemein siehe auch [Wikipedia:Listen](#).

**Inhaltsverzeichnis:** \* 0 1 2 3 4 5 6 7 8 9 A B C D E F G H I J K L M N O P Q R S Sch T U V W X Y Z

(vorherige 200) (nächste 200)

## Unterkategorien

Es werden 32 von insgesamt 32 Unterkategorien in dieser Kategorie angezeigt:

In Klammern die Anzahl der enthaltenen Kategorien (K), Seiten (S), Dateien (D)

- **[+] Teilliste (2284 S)**

- [+] Liste (Abkürzungen) (33 S)
- [-] Liste (Auszeichnung) (2 K, 93 S)
  - [+] Liste (Nobelpreisträger) (18 S)
  - [+] Liste (Verdienstordensträger) (24 S)

## B

- [-] Liste (Bauwerk) (9 K, 100 S)
- [-] Liste (Bahnhöfe) (1 K, 57 S)
  - [-] Bahnhof in Deutschland (17 K, 4 S)
    - [+] Hauptbahnhof in Deutschland (87 S)
    - [+] Bahnhof (Baden-Württemberg) (46 S)
    - [+] Bahnhof (Bayern) (2 K, 36 S)
    - [+] Bahnhof in Berlin (2 K, 31 S)
    - [+] Bahnhof (Brandenburg) (14 S)
    - [+] Bahnhof (Bremen) (3 S)
    - [+] Bahnhof in Hamburg (2 K, 13 S)
    - [+] Bahnhof (Hessen) (2 K, 36 S)
    - [+] Bahnhof (Mecklenburg-Vorpommern) (6 S)
    - [+] Bahnhof (Niedersachsen) (31 S)
    - [+] Bahnhof (Nordrhein-Westfalen) (6 K, 85 S)
    - [+] Bahnhof (Rheinland-Pfalz) (21 S)

### G (Fortsetzung)

- [-] Liste (Geschichte) (1 K, 46 S)  
[+] Zeittafel (14 K, 57 S)
- [+] Liste (Gesellschaft) (22 S)

## K

- [-] Liste (Kultur) (4 K, 57 S)
  - [+] Liste (Museum) (63 S)
  - [-] Liste (Musik) (4 K, 229 S)
    - [+] Diskografie (26 S)
    - [+] Liste (Instrumentalisten) (26 S)
    - [+] Liste (Komponisten) (54 S)
    - [+] Werkverzeichnis (Musik) (26 S)
    - [+] Liste (Nationale historische Stätten und Kulturgüter unter staatlichem Schutz) (32 S)
    - [+] Liste (Theater) (17 S)
- [+] Liste (Kunst) (41 S)

## L

- **[+] Liste (Literatur) (233 S)**

## M

- **[+] Liste (Medien)** (104 S)
- **[+] Liste (Militär)** (190 S)
- **[+] Liste (Musik)** (4 K, 230 S)

## R

- [+] Liste (Recht) (56 S)
- [-] Liste (Religion) (9 K, 14 S)
  - [+] Liste (Bibel) (8 S)
  - [+] Liste (Buddhismus) (5 S)
  - [-] Liste (Christentum) (6 K, 25 S)
    - [+] Liste (Altorientalische Kirchen) (8 S)
    - [-] Liste (Katholizismus) (2 K, 20 S)
      - [+] Liste der Kardinalskreierungen (70 S)
      - [-] Personenliste (Katholizismus) (1 K, 63 S)
      - [-] Liste (Römisch-katholischer Bischof) (14 K, 103 S)
        - [+] Liste (Römisch-katholischer Bischof in Belgien) (9 S)
        - [+] Liste (Römisch-katholischer Bischof in Deutschland) (10 S)
        - [+] Liste (Römisch-katholischer Bischof in Frankreich) (13 S)
        - [+] Liste (Römisch-katholischer Bischof in Irland) (17 S)
        - [+] Liste (Römisch-katholischer Bischof in Italien) (173 S)
        - [+] Liste (Römisch-katholischer Bischof in Kroatien) (14 S)
        - [+] Liste (Römisch-katholischer Bischof in den Niederland) (10 S)
        - [+] Liste (Römisch-katholischer Bischof in Polen) (16 S)
        - [+] Liste (Römisch-katholischer Bischof in Portugal) (15 S)
        - [+] Liste (Römisch-katholischer Bischof in Schottland) (12 S)
        - [+] Liste (Römisch-katholischer Bischof in der Schweiz) (10 S)
        - [+] Liste (Römisch-katholischer Bischof in Spanien) (54 S)
        - [+] Liste (Römisch-katholischer Bischof in Tschechien) (10 S)



## Kategorie:Liste (Bürgermeister)

### Seiten in der Kategorie „Liste (Bürgermeister)“

Es werden 86 von insgesamt 86 Seiten in dieser Kategorie angezeigt:

#### A

- Liste der Oberbürgermeister und Oberstadtdirektoren von Aachen
- Liste der Bürgermeister von Albstadt
- Altonaer Bürgermeister
- Liste der Oberbürgermeister Augsburgs
- Liste der Bürgermeister Aurichs

#### B

- Liste der Bürgermeister und Oberbürgermeister von Bamberg
- Liste der Stadtpräsidenten von Bern
- Liste der Bürgermeister von Bogotá
- Liste der Oberbürgermeister und Oberstadtdirektoren von Bonn
- Liste der Bürgermeister der Stadt Boston
- Liste der Stadtoberhäupter von Braunschweig
- Liste der Bremer Bürgermeister
- Liste der Stadtoberhäupter von Bremerhaven

#### C

- Liste der Oberbürgermeister der Stadt Chemnitz
- Liste der Bürgermeister von Chicago

#### D

- Liste der Danziger Bürgermeister
- Liste der Bürgermeister von Dautphetal
- Liste der Bürgermeister von Detmold
- Liste der Bürgermeister der Stadt Dorsten
- Liste der Oberbürgermeister von Dresden

#### E

#### G

- Liste der Bürgermeister von Gmunden
- Liste der Grazer Bürgermeister
- Liste der Bürgermeister von Greifswald
- Liste der Bürgermeister von Grimmen
- Liste der Bürgermeister von Görlitz

#### H

- Liste der Oberbürgermeister von Halle
- Hamburger Bürgermeister
- Liste der Bürgermeister von Hamm
- Liste der Stadtoberhäupter von Hannover
- Liste der Bürgermeister und Oberbürgermeister von Hildesheim

#### I

- Liste der Oberbürgermeister von Ingolstadt

#### K

- Liste der Bürgermeister der Stadt Kattowitz
- Liste der Oberbürgermeister der Stadt Köln

#### L

- Liste der Stadtpräsidenten von Lausanne
- Liste der Bürgermeister der Stadt Leipzig
- Liste der Lengfelder Bürgermeister
- Liste der Bürgermeister der Stadt Lima
- Liste der Bürgermeister von Linz
- Liste der Bürgermeister der Stadt Luxemburg
- Liste der Bürgermeister von Bukarest
- Liste der Bürgermeister von Göttingen
- Liste der Bürgermeister von Pittsburgh
- Liste der Bürgermeister von Straubenhardt

#### M (Fortsetzung)

- Liste der Stadtoberhäupter von Marburg
- Liste der Bürgermeister von Moskau
- Münchner Bürgermeister

#### N

- Liste der Bürgermeister der Neustadt Hildesheim
- Liste der Bürgermeister der Stadt New York
- Liste der Oberbürgermeister der Stadt Nürnberg

#### P

- Liste der Bürgermeister der Stadt Peking
- Liste der Bürgermeister von Plauen
- Liste der Bürgermeister von Potštát

#### R

- Liste der Oberbürgermeister von Radebeul
- Liste der Oberbürgermeister von Regensburg
- Liste der Bürgermeister von Reykjavík
- Liste der Rostocker Bürgermeister
- Liste der Bürgermeister von Roubaix

#### S

- Liste der Bürgermeister der Stadt Salzburg
- Liste der Bürgermeister von Schöneiche bei Berlin
- Liste der Schweriner Bürgermeister
- Liste der Bürgermeister der Stadt Shanghai
- Liste der Bürgermeister und Oberbürgermeister von Stralsund
- Liste der Bürgermeister der Stadt Swakopmund
- Liste der Bürgermeister der Stadt São Paulo

#### V

- Liste der Bürgermeister von Vancouver

Suche

**Artikel**

**Volltext**

Navigation

- Hauptseite
- Über Wikipedia
- Themenportale
- Von A bis Z
- Zufälliger Artikel

Mitmachen

- Hilfe
- Autorenportal
- Letzte Änderungen
- Spenden

Werkzeuge

- Links auf diese Seite
- Änderungen an verlinkten Seiten
- Hochladen
- Spezialseiten
- Druckversion
- Permanentlink

Andere Sprachen

- English
- Français
- Bahasa Indonesia
- Nederlands
- Norsk (bokmål)

- Country, geo-coordinates, boroughs
- Elevation, area
- Zip codes
- Population, population density
- Mayor, mayor's party
- ...

- 

English

- Country, geo-coordinates, boroughs
- Elevation, area
- Zip codes
- Population, population density
- Mayor, mayor's party

- But only we humans can properly make sense of all this data!
- For a computer it looks like this ...

## 위키백과

우리 모두의 백과사전

대문

사용자 모임

요즘 화제

최근 바뀐

모든 문서 보기

임의 문서로

도움말

기부

▼ 도구모음

여기를 가리키는 문서

가리키는 글의 바뀐

파일 올리기

특수 문서 목록

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문서 정보

데이터 항목

이 문서 인용하기

▶ 인쇄/내보내기

▼ 다른 언어

Арысша

Acèh

★ Afrikaans

Akan

Alemannisch

አማርኛ

Aragonés

Ænglisc

العربية

অসমীয়া

Астурія

Asturianu

Aymar aru

Azərbaycanca

Башҡортса

Boarisch

Žemaitėška

Беларуская

Беларуская (тарашкевіца)

Български

Bislama

বাংলা

བོད་སྐད་

Brezhoneg

## 베를린

위키백과, 우리 모두의 백과사전.

 다른 뜻에 대해서는 **베를린 (동음이의)** 문서를 참조하십시오.

**베를린**(독일어: Berlin IPA: [bəˈʁliːn] ⓘ 듣기 (도움말·정보))은 **독일**의 수도이다. 2007년 12월 현재 인구 341만 6,300 명으로, 독일 내 단일규모로는 최대의 도시이다. 독일 북동부 **슈프레 강**과 **하펠 강** 연안에 있다. 독일의 **브란덴부르크** 주에 둘러싸여 있으며 베를린 자체도 연방주이다. 한자로 음차해서 **백림**(중국어: 柏林, 병음: bó lín 보린<sup>[\*]</sup>)이라고도 한다.

## 목차 [숨기기]

## 1 역사

- 1.1 초기 역사
- 1.2 프로이센 왕국의 수도
- 1.3 불안한 시대
- 1.4 분단 도시
- 1.5 통일과 독일의 새 수도

## 2 주민

## 3 문화

## 4 경제

## 5 스포츠

## 6 자매 도시

## 7 교통

## 8 바깥 고리

## 역사 [편집]

## 초기 역사 [편집]

약 1,500년 전에는 현재의 베를린 지역에 다양한 **슬라브** 민족들이 살고 있었다. 독일인 정착자들이 1100년대에 이 지역을 차지하기 시작하였다. 베를린은 이때까지만 해도 작은 마을에 지나지 않았고, 슈프레 강의 북동쪽 독에서 자리나기 시작하였다. 같은 시기에 슈프레 강의 섬에서 쿨른(Coelln)이라는 마을이 형성되었다. 두 마을은 통상의 중심지였다. 1307년에는 베를린과 쿨른이 그들의 공동 방어를 위한 연합을 설립하였고, 공동의 시청사를 지었다. 1400년대에 베를린은 **브란덴부르크** 주의 중요한 도시가 되었다. 1400년대 후반에는 **호엔홀레른 왕가**가 베를린을 그들의 관저로 만들었다. 30년 전쟁 중에는 큰 피해를 입었고, 인구가 6,000명으로 줄어들었다.

## 프로이센 왕국의 수도 [편집]

베를린은 호엔홀레른 왕가의 **프리드리히 빌헬름**의 아래 다시 번영하였다. 그는 브란덴부르크를 1640년부터 1688년까지 통치하였고, 산업을 촉진시키고 건설에 후원하였다. 그의 통치아래, 슈프레 강과 **오데르 강** 사이에 운하를 건설하였다. 1701년 프리드리히 빌헬름의 아들 **프로이센의 프리드리히 1세**가 프로이센 왕국의 수도로 삼았다. 1710년에는 베를린, 쿨른과 3개의 이웃 집단들이 통합하여 하나의 베를린을 이루었다. 1700년대에 베를린은 작은 읍에서 번영하는 통상과 제조업의 중심지로 증대하였다. 예술과 과학이 번창하였고, 산업이 빠르게 퍼져나갔다. 1806년부터 1808년까지 **나폴레옹 1세**에 의해 점령당하였고, 그가 떠나자 독일의 강국이 된 프로이센의 수도로 번영하였다. 그 후 1871년 **독일 제국**의 수도가 되고 **제2차 세계 대전** 때까지 독일의 수도였다. 도시의 인구는 1871년에 826,000명에서 1910년에 2,076,200명으로 늘어났다.

불안한 시대

좌표: 북위 52° 31′ 7″﻿ 동경 13° 24′ 29″베를린  
Berlin

베를린의 위치

위치 북위 52° 31′ 7″﻿ 동경 13° 24′ 29″

## 행정

나라  독일

## 인구

인구 3,440,400명 (2010년)

## 지리

면적 891.85 km²

## Humans can help

- There are different links!
  - Klaus Wowereit
  - Großer Wannsee
  - Bezirk Spandau
- There are different numbers!
  - 3,515,473
  - 891.85 (km<sup>2</sup>)
  - 10115-14199
  - 030

## Annotations

- Named links (relations)
  - has mayor
  - has lake
  - has borough
- Named attributes
  - has population
  - has area
  - has zip code
  - has area code

- MediaWiki
- MediaWiki deficits and how SMW overcomes them
- **Semantic MediaWiki**
  - Knowledge graph
  - Names links/Properties
  - Special pages
  - SMW mark up/annotations
  - Annotations via templates
- Semantic MediaWiki – Retrieving Data

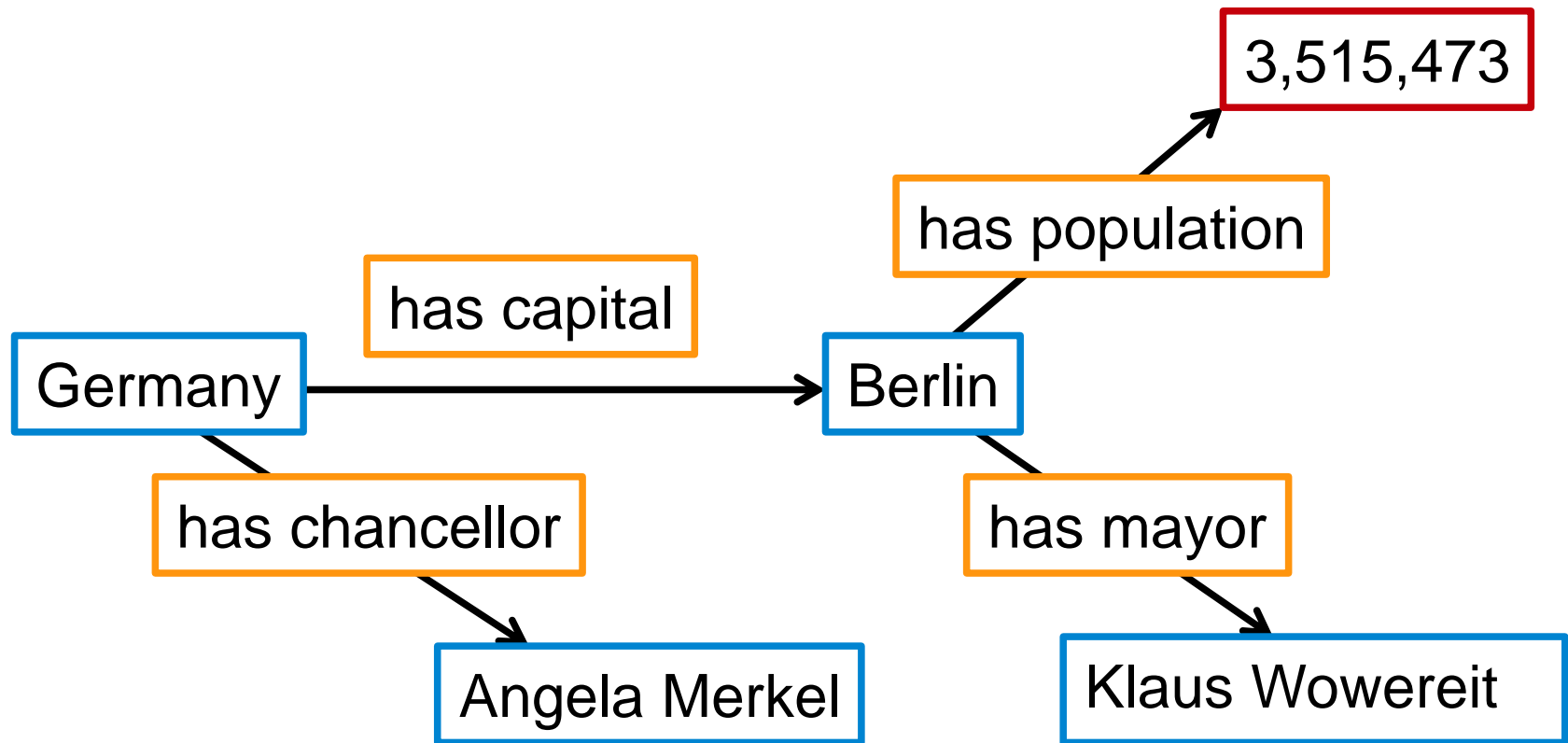


- Data: **property-value pairs assigned to pages**
- Examples (page – property – value):

Berlin	has population	3,515,473
Berlin	has mayor	K. Wowereit
Germany	has capital	Berlin
Kadir Nurman	date of death	Oct. 24, 2013

- Pages can be related to pages (see has capital)

Think of SMW data in a graphical way:

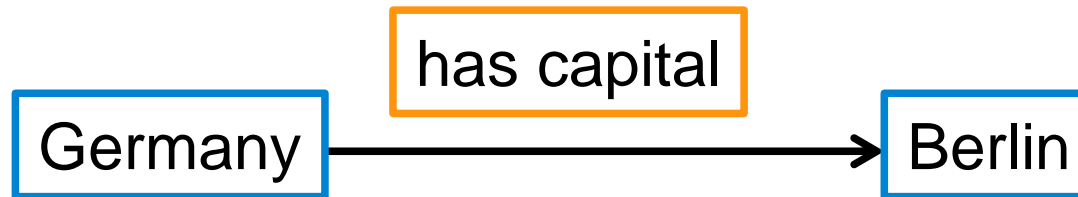


- Data is edited on the page that it is about, e.g. *Germany*:



- Two basic methods:
  - `[[has capital::Berlin]]`  
Displays like a link `[[Berlin]]`
  - `{{#set: has capital=Berlin}}`  
Not displayed

- “Germany” is a wiki page, “Berlin” is a wiki page ...  
... what is “has capital”?



- → A wiki page in the Property namespace:

Property:has capital

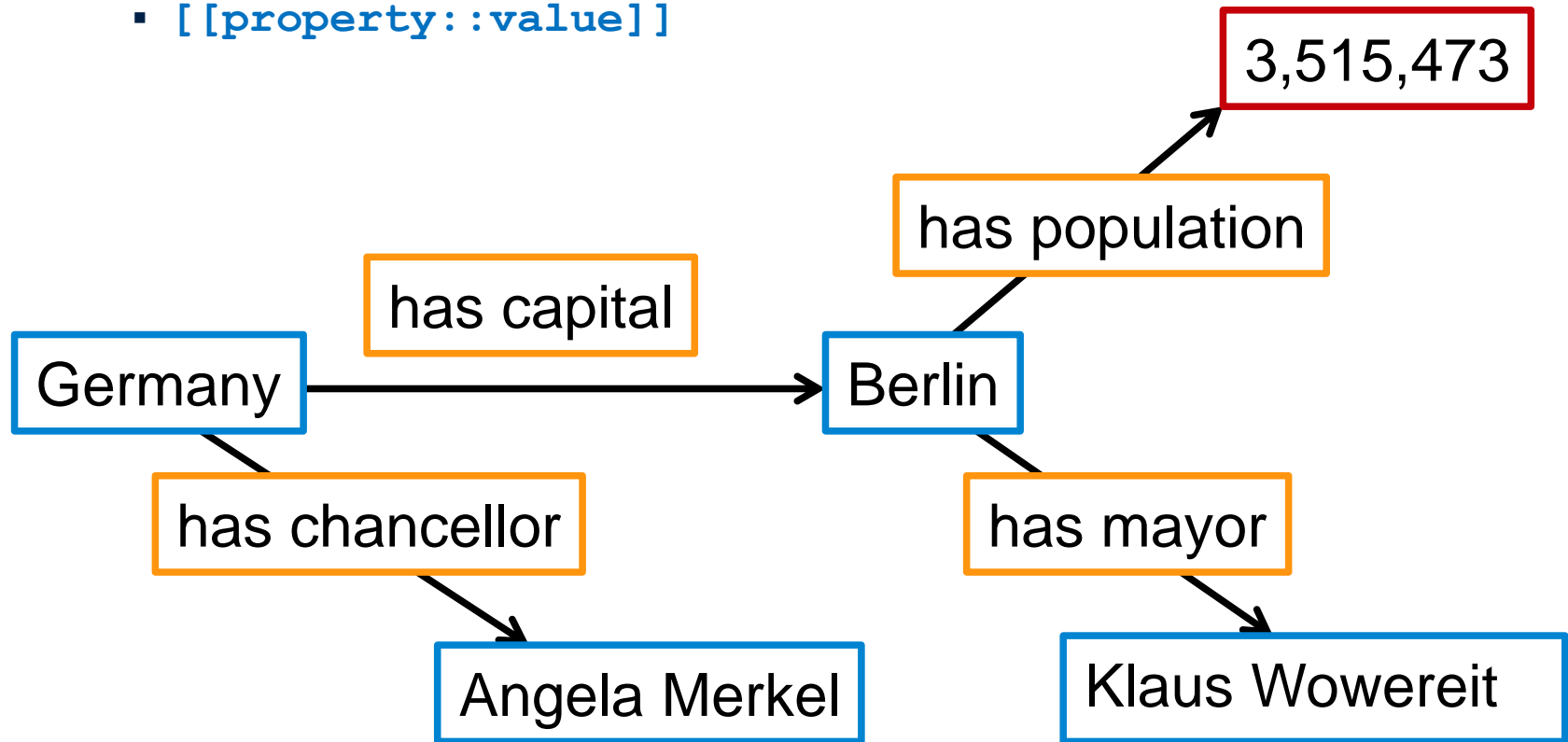
- Property pages have two main uses
  - Document properties (how/when to use them?)
  - Declare properties (how should SMW treat them?)
  
- Main declaration: the datatype of the property
  - Specified using property “has type”
  - Common types: Number, Date, Wikipage, Text, ...
  - Default type (if undeclared): Wikipage

Datatype	Description
<b>Boolean</b>	Holds Boolean (true/false) values
<b>Code</b>	Holds technical, pre-formatted texts (similar to type Text)
<b>Date</b>	Holds particular points in time
<b>Email</b>	Holds e-mail addresses
<b>Geographic coordinate</b>	Holds coordinates describing geographic locations ( <i>via Semantic Maps</i> )
<b>Number</b>	Holds integer and decimal numbers, with an optional exponent
<b>Page</b>	Holds names of wiki pages, and displays them as a link
<b>Quantity</b>	Holds values that describe quantities, containing both a number and a unit
<b>Record</b>	Allows saving compound property values that consist of a short list of values with fixed type and order
<b>Telephone number</b>	Holds international telephone numbers based on the RFC 3966 standard
<b>Temperature</b>	Holds temperature values (similar to type Quantity)
<b>Text</b>	Holds text of arbitrary length
<b>URL</b>	Holds URIs, URNs and URLs

[http://semantic-mediawiki.org/wiki/Help:Properties\\_and\\_types#List\\_of\\_datatypes](http://semantic-mediawiki.org/wiki/Help:Properties_and_types#List_of_datatypes)

- Datatypes control input and output (and more)
- Output:
  - `[[has capital::Germany]]` appears as link
  - `[[has population::1000]]` appears as number
- Input:
  - `[[my property::1000]]` vs. `[[my property::1,000]]`
  - Different value if “my property” has type Wikipage
  - Same value if “my property” has type Number

- It is now clear how to enter this data:
  - On the subject-page
  - `[[property::value]]`



- Go back to your page and turn your text snippets (that are useful for humans) into data useful for query processing
- Reuse the following properties:

Firstname : string

Lastname : string

Age: number

Height: quantity

Employer : page

Job description : string

City of birth : page

Date of birth : date

City or residence: page

Country: page

Pet : page

Hotel : page

- Save your edits regularly and check the *fact box* at the bottom of the page

- How can we view the data we enter?
  - Special:Browse – view all data for a page
  - **Property:Name** – view all data for property
  - Special:Types – view all properties of some type
  - Special:Properties – view all properties
  - And various others (not quite as important)
  
- **Factbox** shows all data about one page
  - Below edit field in editing preview
  - At page bottom on some or all pages

- Change your wiki page to use templates:  
**{{Welcome2 | <Firstname> | <Lastname> | <Age>}}**  
**{{Place of birth | lat=<Latitude> | long=<Longitude>}}**  
**{{Place of residence | lat=<Latitude> | long=<Longitude>}}**
- Enter the latitude/longitude of the cities you were born in and where you live respectively.
  - This will add some more semantic data to your page, this time geographic data.
- Check out the templates you just added to see how they work.
- Do not modify them.

[http://www.semantic-mediawiki.org/wiki/Help:Type\\_Geographic\\_coordinate](http://www.semantic-mediawiki.org/wiki/Help:Type_Geographic_coordinate)

- Create ontologies and data interactively

**C** Category Tree **P** Property Tree

Add category | Edit Category

- Entity
  - Countries/CountriesAndRegions
    - Countries/Country
    - Countries/SelfGovernedCountry
    - Countries/SubordinateCountry
  - Countries/Region
    - Countries/GeoRegion
    - Countries/TradeRegion
- Person

Filter  Filter

**I** Instances

Create instance | Edit instance

- Countries/Afghanistan
- Countries/Albania
- Countries/Algeria
- Countries/Andorra
- Countries/Angola
- Countries/Antigua and Barbuda
- Countries/Argentina
- Countries/Armenia
- Countries/Australia
- Countries/Austria
- Countries/Azerbaijan
- Countries/Bahamas the
- Countries/Bahrain
- Countries/Bangladesh
- Countries/Barbados
- Countries/Belarus
- Countries/Belgium
- Countries/Belize
- Countries/Benin
- Countries/Bhutan

Filter  Filter

**P** Properties

Add property to domain:  
'Countries/SelfGovernedCountry' | Edit property

Properties	Values
Countries/hasCurre...	\$A
Countries/hasCurre...	Australian dollar
Countries/hasMaxLa...	-9.23
Countries/hasMaxLo...	159.11
Countries/hasMinLa...	-54.76
Countries/hasMinLo...	112.91
Countries/hasName	Australia
Countries/isMember...	Countries/Australia and New Zealand
Countries/isMember...	Countries/Oceania
Countries/isMember...	Countries/PIF
Countries/validSin...	1985

Filter  Filter

- MediaWiki
- MediaWiki deficits and how SMW overcomes them
- Semantic MediaWiki – Creating Data
  - Incl. Hands-on
- **Semantic MediaWiki–Retrieving Data**
  - **Queries (#ask: syntax and model)**
  - **Query Formats**

- How can we view the data we enter?
  - Special:Browse – view all data for a page
  - Property:Name – view all data for property
  - Special:Types – view all properties of some type
  - Special:Properties – view all properties
  - And various others (not quite as important)
  
- **Factbox** shows all data about one page
  - Below edit field in editing preview
  - At page bottom on some or all pages

- How can we embed data into wikipages?
  - Parser function **#show** can display property values
- Examples:

`{{#show:Berlin | ?has population}}` – show this number  
`{{#show:Germany | ?has capital}}` – show this page (link)

- Re-use data without re-entering it

[http://semantic-mediawiki.org/wiki/Help:Inline\\_queries](http://semantic-mediawiki.org/wiki/Help:Inline_queries)

- How can we find pages based on their data?
  - Parser function **#ask** can answer many queries
- Examples:

`{{#ask: [[Category:City]] }}` – show pages with category

`{{#ask: [[has mayor::Klaus Wowereit]] }}`

– show pages with this data

`{{#ask: [[Category:City]] [[has mayor::Klaus Wowereit]] }}`

– show pages with both

- Main idea:
  - ask for a page with some annotations,
  - use the same syntax as in the annotation, e.g.
    - `[[Category:City]]`
    - `[[has mayor::Klaus Wowereit]]`
  
- Advanced query conditions:
  - `[[has population::+]]` – pages with *some* population
  - `[[User::+]]` – pages in *namespace* User
  - `[[::Category::+]]` – pages in namespace Category

- Keyword “OR” can be used to allow alternatives:  

```
{{#ask: [[Category:City]] OR [[Category:Town]]}}
```
- Default: find pages that satisfy all conditions given (this would be “AND”)

- We have already seen two types of property values
  - `[[has mayor::Klaus Wowereit]]` – concrete value
  - `[[has population::+]]` – any value (at least one)
- Other conditions based on comparators:
  - `[[has population::>100]]` – greater or equal 100
  - `[[has population::<100]]` – less or equal 100
  - `[[has population::!100]]` – inequal 100
  - `[[has mayor::~~Klaus*]]` – starting with “Klaus”
- Note: it always means “has some value for the property that is greater/less/not equal to 100”

[http://semantic-mediawiki.org/wiki/Help:Selecting\\_pages](http://semantic-mediawiki.org/wiki/Help:Selecting_pages)

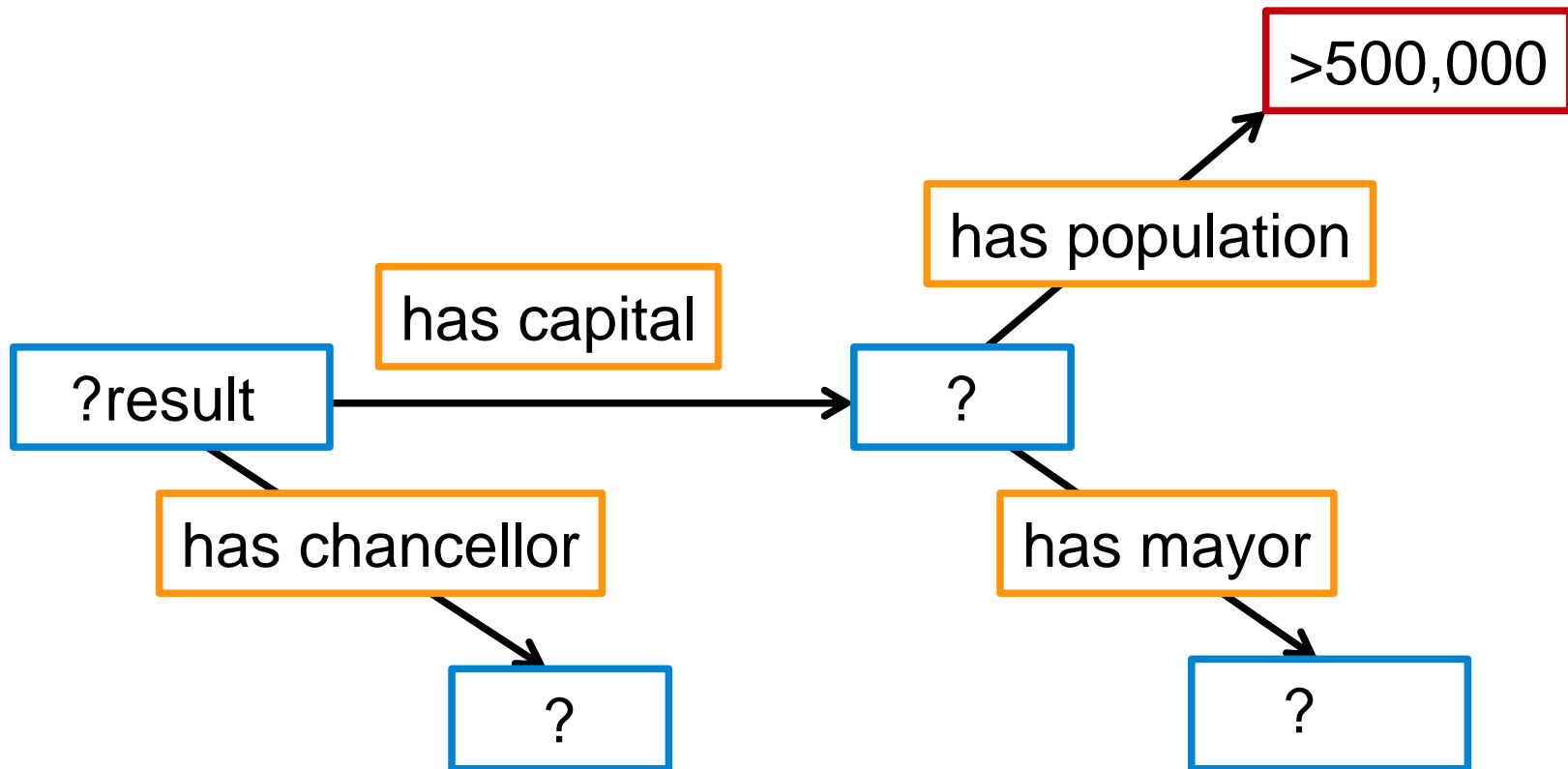
- Let's retrieve some data.
- Add a new section to your page titled
  - Queries 1
- Add to this section
  - A #show query for Michael\_Erdmann's hotel.
  - An #ask query listing all SMW Users
  - An #ask query listing all SMWCon Participants whose first names starts with "M"

```
{{#show: PageName | ?PropertyName }}
```

```
{{#ask:
```

*CategoryConditions in double square brackets*  
*PropertyConditions in double square brackets }}*

Think of query conditions as graphs (actually trees)



- Printout requests, given as parameters in #ask
  - “?property name”
- Example:

```
{{#ask: [[Category:City]]
| ?has population
| ?has mayor
}}
```

→ Displays as a **table** with three columns

- Format defined by parameter “format”, e.g.

```
{{#ask: [[Category:City]]
| ?has population
| ?has mayor
| format=ol
}}
```

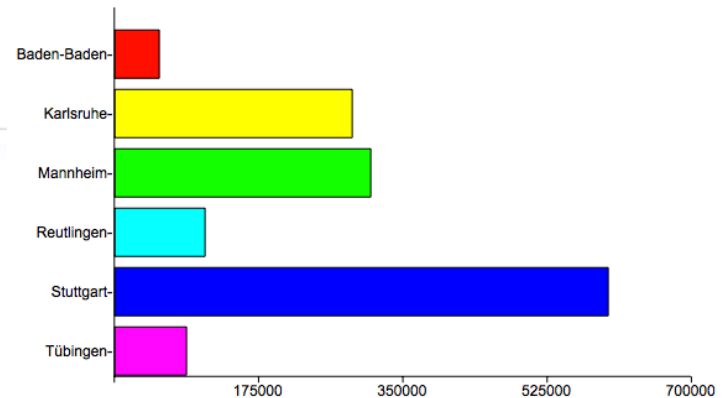
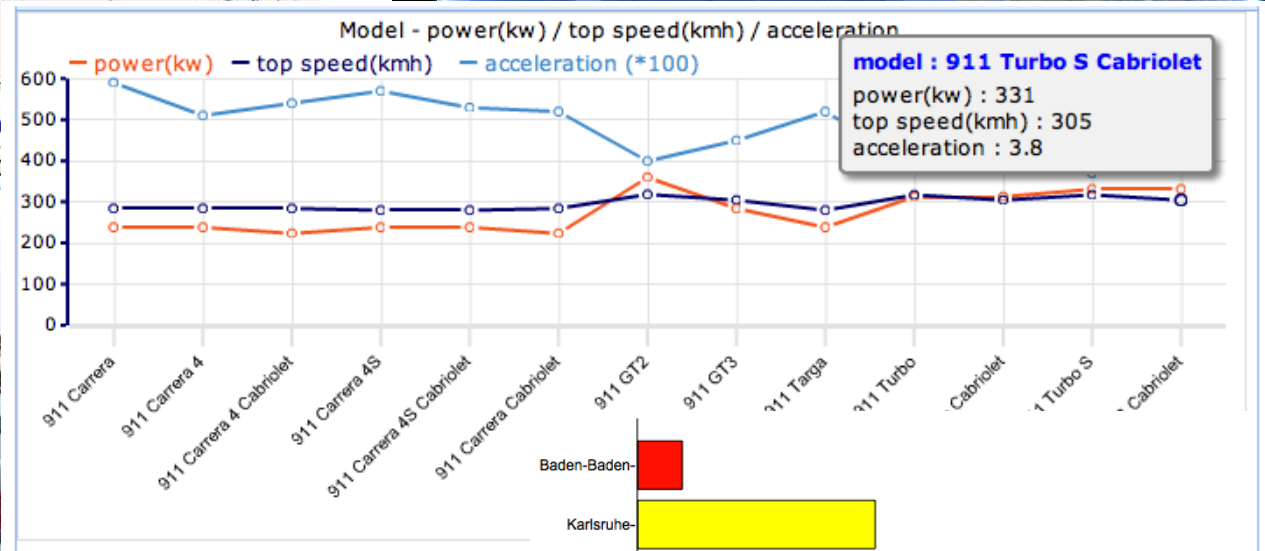
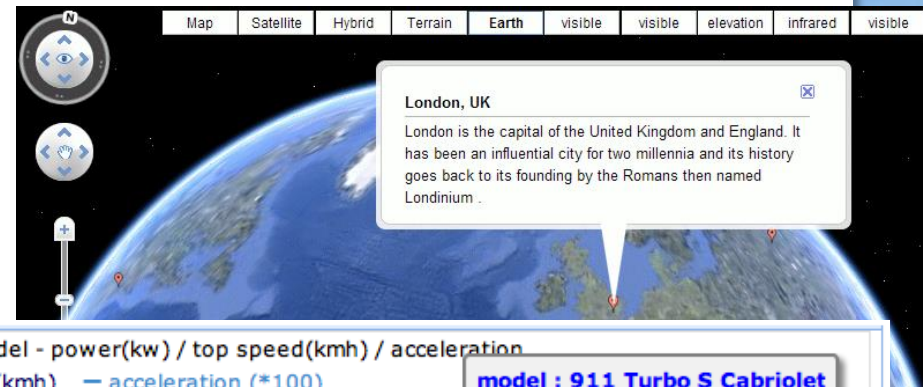
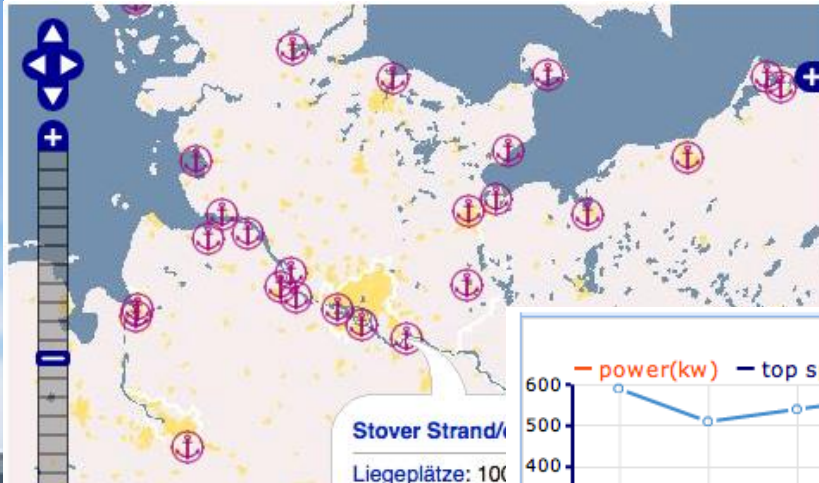
→ Displays results as an **ordered list**

- List results on page: [list](#), [ol](#), [ul](#), [table](#), ...
- Export query results: [rss](#), [json](#), [csv](#), [dsv](#), ...
- Aggregators: [count](#), [sum](#), [latest](#) ...
- Format results with template: [template](#)
- Embed result pages instead: [embed](#)
- [Maps](#)
- Fancy interactive formats: [timelines](#), [data browsers](#), [slide shows](#), ...
- Partly in extension [Semantic Result Formats \(SRF\)](#) and [Semantic Maps \(SM\)](#)

[http://semantic-mediawiki.org/wiki/Help:Result\\_formats](http://semantic-mediawiki.org/wiki/Help:Result_formats)

- Restrict the max. number of results
  - `limit=10` – only shows the first 10 results
- Sort the query result in a particular order
  - `sort = Population` – defines that the Population property will be used for sorting
  - `order = descending` – could also be “ascending”, “asc”, or “desc”
- Many individual parameters for each query format

# Displaying Query Results



**Mercedes-Benz E-Class coupe (US) Rear view of the E-Class coupe**

- **Mercedes Benz W212** : Mercedes-Benz E-Class coupe (US) Rear view of the E-Class coupe
- **Thumbnail** : Mercedes-Benz E 350 CGI Coupé Heck.JPG

- Add a new section to your page titled
  - Queries 2
- Add to this section
  - #ask query showing a table with all SMWCon Participants with their city and country of residence. Sort this table by their last names.
  - #ask query showing a diagram of participants with their age (format=googlebar)
  - Show the birth dates of participants in a format=timeline (parameter : timelinebands=DECADE,YEAR)
  - Compute the average age of SMWCon Participants.

[http://semantic-mediawiki.org/wiki/Help:Result\\_formats](http://semantic-mediawiki.org/wiki/Help:Result_formats)

- A number of query formats support templates:
  - List, table, ul, ol, template, map
- They understand the parameter
  - `template=TEMPLATE1`
- Where `TEMPLATE1` is the pagename of a template
- The result parameters of the query are sent to the template as arguments.
- The templates renders them in any way the developer fancies.

- Query:

```
{{#ask: [[Category:SMWCon Participant]]
|?Date of birth
|?City of birth
|?Age
|format=ul
|template=PersonListEntry}}
```

- Template:

```
{{{1}}} was born {{{2}}} in {{{3}}}.
{{#if: {{{4|}}} |
    She/He is {{{4}}} years old. | }}
```

- Add a new section to your page titled
  - Queries 3
- Add to this section
  - #ask query showing a list with all SMWCon Participants and some data rendered via a template
  - #ask query showing a map with the birth places of all participants (format=map)
    - “**Place of birth**” is of type geographic coordinate
  - Compute the average age of SMWCon Participants.

[http://semantic-mediawiki.org/wiki/Help:Result\\_formats](http://semantic-mediawiki.org/wiki/Help:Result_formats)

Other uses for the data

- Supports full-text search
- Drill-down on arbitrary ...
  - Categories
  - Properties, and
  - Property values
- Facets
  - generated on the fly
  - based on data



[Data Explorer](#) | [Query Interface](#) | [Change view](#) | [Log in / create account](#)

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[My dashboard](#) ▾ | [Articles and data](#) ▾ | [Getting started with Datawiki](#) ▾ | [New page](#) |

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[Last visited:](#) [Administration](#) | [Version](#) | [Search](#)

## Faceted Search [More ▾](#)

**Selected facets**

- ▣ [Countries/SelfGovernedCountry](#) ✕
- ▣ [Countries/isMemberOfRegion::Countries/Africa](#) ✕
  - ▣ [Countries/Africa](#) (53)
  - ▣ [Countries/Asia](#) (47)
  - ▣ [Countries/Europe](#) (45)
  - ▣ [Countries/Americas](#) (35)
  - ▣ [Countries/CEN\\_SAD](#) (28)
  - ▣ [Countries/EU](#) (27)
  - ▣ [Countries/COMESA](#) ... (19)
  - ▣ [Countries/COMESA](#) (19)
  - ▣ [Countries/western Africa](#) (17)
  - ▣ [Countries/eastern Africa](#) (17)

[more](#)

[Remove all facets](#)

**Available facets**

**Categories**

no items found in current selection

**Properties**

- ▣ [Part of bundle](#) (196)
- ▣ [Modification date](#) (196)
- ▣ [Countries/validUntil](#) (196)
- ▣ [Countries/validSince](#) (196)
  - ▣ [1985 - 2006](#) (196)
  - ▣ [1985 - 1988](#) (165)
  - ▣ [1989 - 1992](#) (24)
  - ▣ [1993 - 1997](#) (5)
  - ▣ [2002 - 2006](#) (2)
- ▣ [Countries/hasName](#) (196)
- ▣ [Countries/hasCurrency](#) ... (195)
- ▣ [Countries/hasMinLongitude](#) ... (186)
- ▣ [Countries/hasMinLatitude](#) ... (186)
- ▣ [Countries/hasMaxLongitude](#) ... (186)

**All namespaces** [Main](#) [Template](#) [Property](#) [Form](#) [Category](#) [User](#) [File](#) [MediaWiki](#)

[Find](#) Sort by [Latest article first](#) ▾

Results 1 to 10 of 196

**Countries/Somalia** ⓘ

[[Countries/hasMaxLongitude::51.42]] [[Countries/hasMaxLatitude::11.99]] [[Countries/hasCurrencyCode::So.Sh]] [[Countries/isMemberOfRegion::Countries/IGAD]] [[Countries/hasNeighbor::Countries/Ethiopia]] [[Countries/isMemberOfRegion::Countries/CEN\_SAD]]

is in category: [Countries/SelfGovernedCountry](#)

[\(Show properties\)](#)

Last change: 2013-03-18 17:20

**Countries/Guyana** ⓘ

[[Countries/hasMaxLatitude::8.55]] [[Countries/isMemberOfRegion::Countries/CARIFORUM]] [[Countries/hasMaxLongitude::56.48]] [[Countries/isMemberOfRegion::Countries/Americas]] [[Countries/hasCurrencyName::dollar]] [[Countries/isMemberOfRegion::Countries/South\_America]]

is in category: [Countries/SelfGovernedCountry](#)

[\(Show properties\)](#)

Last change: 2013-03-18 17:20

**Countries/Algeria** ⓘ

[[Countries/hasMaxLatitude::37.09]] [[Countries/hasMinLongitude::-8.67]] [[Countries/isMemberOfRegion::Countries/Africa]] [[Category:Countries/SelfGovernedCountry]]

is in category: [Countries/SelfGovernedCountry](#)

[\(Show properties\)](#)

Last change: 2013-03-18 17:20

**Countries/Slovenia** ⓘ

[[Countries/hasNeighbor::Countries/Italy]] [[Countries/hasPredecessor::Countries/Socialist\_Federal\_Republic\_of\_Yugoslavia\_the]] [[Countries/hasCurrencyCode::EUR or Euro]] [[Countries/hasMaxLatitude::46.88]] [[Countries/validSince::1992]] [[Countries/validUntil::]]

is in category: [Countries/SelfGovernedCountry](#)

[\(Show properties\)](#)

Last change: 2013-03-18 17:20

# Thank you for your attention and have fun practicing SMW

Tutorial Day  
SMWCon Fall 2013  
28.-30. October 2013, Berlin

Michael Erdmann, DIQA



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- **Appendix – Advanced Features**
  - **MediaWiki**
  - **Semantic MediaWiki**

- MediaWiki
- MediaWiki deficits and how SMW overcomes them
- Semantic MediaWiki – Creating Data
  - Incl. Hands-on
- Semantic MediaWiki–Retrieving Data
- **Advanced MediaWiki Features**
- Advanced SMW Features

- Prefixes, separated from title by colon “:”
- Not all prefixes that end in “:” are namespaces!
  - Predefined prefixes provided by MW:  
*Main (empty), User, Category, Template, Help, MediaWiki, File, Special, Project (sitename)*
  - More can be added via configuration
  - Purpose is to distinguish basic “content types”
- Namespaces can have aliases (e.g. File: and Image:)
- Special: is for pages with fixed functionality, no editing
- Every namespace has a talk version: Talk, User talk, ...

- Postfixes, separated from title by slash “/”
- Not all postfixes after “/” are subpages!
  - Enabled for certain namespaces
  - By default only for User and all Talk pages
- Often not appropriate for organising pages (rigid, hierarchical content structure)
- Small difference to pages with “/” in title
  - For example when moving pages

- A page can redirect to any other
- It should contain one line only:

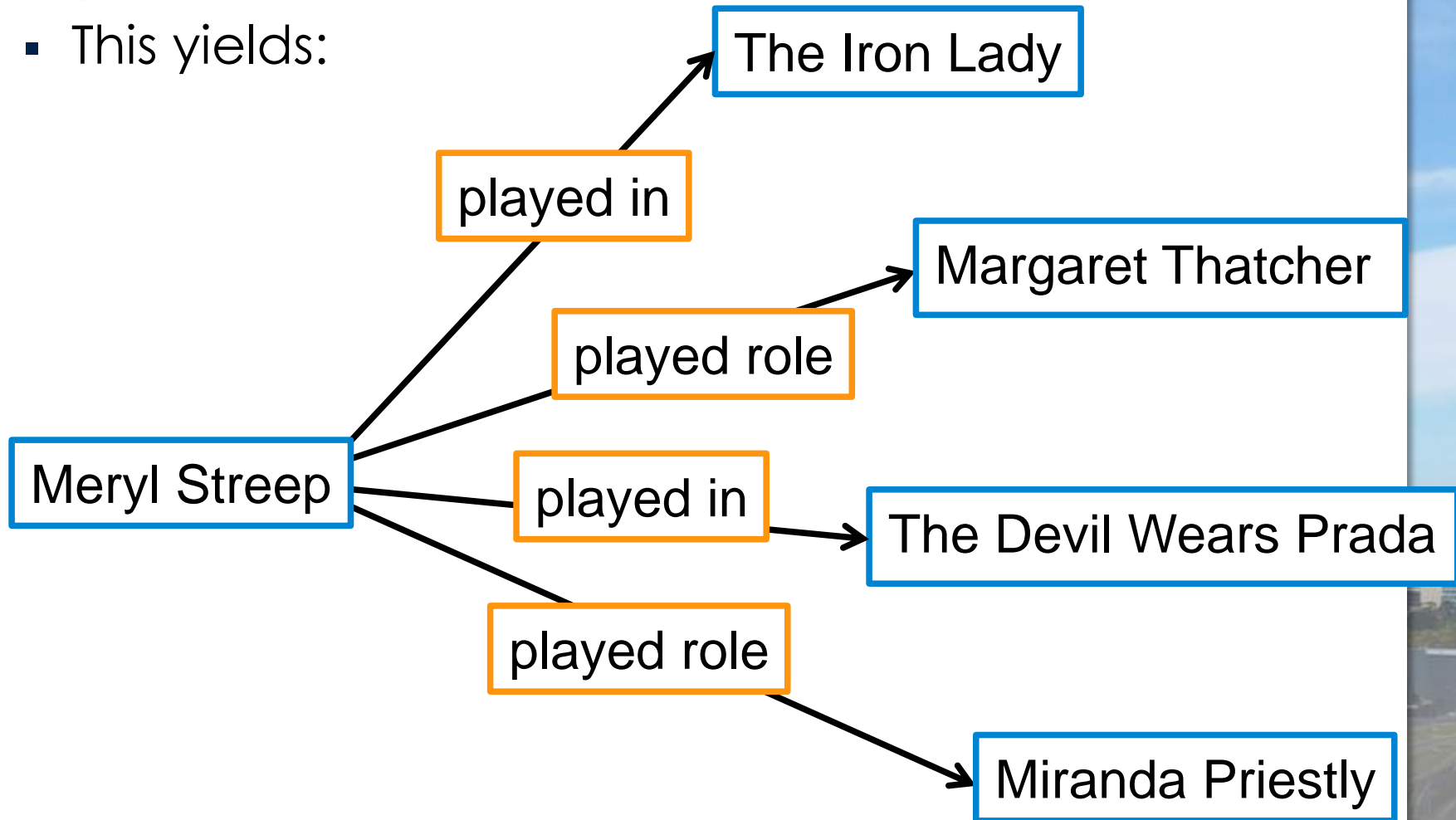
```
#REDIRECT [[Target page name]]
```

- Very useful for creating synonyms and search hints
- After a page has been renamed/moved, the old page by default contains a redirect to the new page.

- MediaWiki
- MediaWiki deficits and how SMW overcomes them
- Semantic MediaWiki
- Querying for data
- Advanced MediaWiki Features
- **Advanced SMW Features**
  - **Subobjects**
  - **Inverse Properties**
  - **Subqueries**

- Example:
  - “Meryl Streep played [Margaret Thatcher](#) in [The Iron Lady](#)”
- Properties “played role” and “played in”?
  - Meryl Streep **played in** [The Iron Lady](#)
  - Meryl Streep **played role** [Margaret Thatcher](#)
- But also:
  - Meryl Streep **played in** [The Devil Wears Prada](#)
  - Meryl Streep **played role** [Miranda Priestly](#)

- This yields:

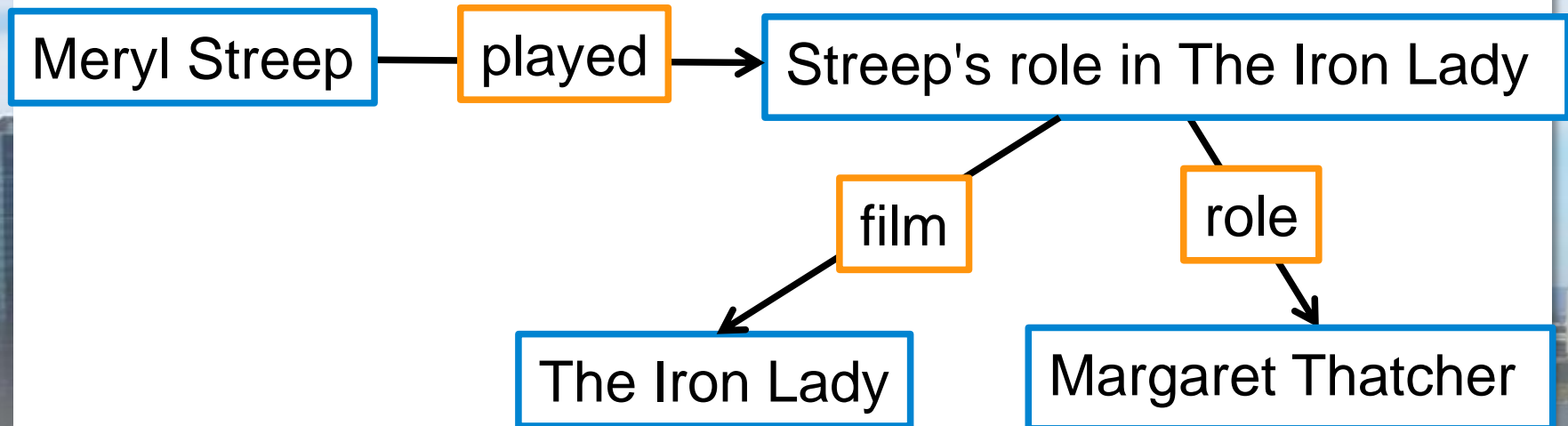


- Example:
  - “Meryl Streep played Margaret Thatcher in The Iron Lady”
- Properties “played role” and “played in”?
  - Meryl Streep **played in** The Iron Lady
  - Meryl Streep **played role** Margaret Thatcher
- But also:
  - Meryl Streep **played in** The Devil Wears Prada
  - Meryl Streep **played role** Miranda Priestly

→ So did she play Miranda Priestly in The Iron Lady?

- Solution:
  - Create a new page “Streep's role in The Iron Lady” with properties:
    - [[role::Margaret Thatcher]]
    - [[film::The Iron Lady]]
  - Add to Meryl Streep's page:
    - [[played::Streep's role in The Iron Lady]]

- This yields:



- Solution:
  - Create a new page “Streep's role in The Iron Lady” with properties:
    - [[role::Margaret Thatcher]]
    - [[film::The Iron Lady]]
  - Add to Meryl Streep's page:
    - [[played::Streep's role in The Iron Lady]]

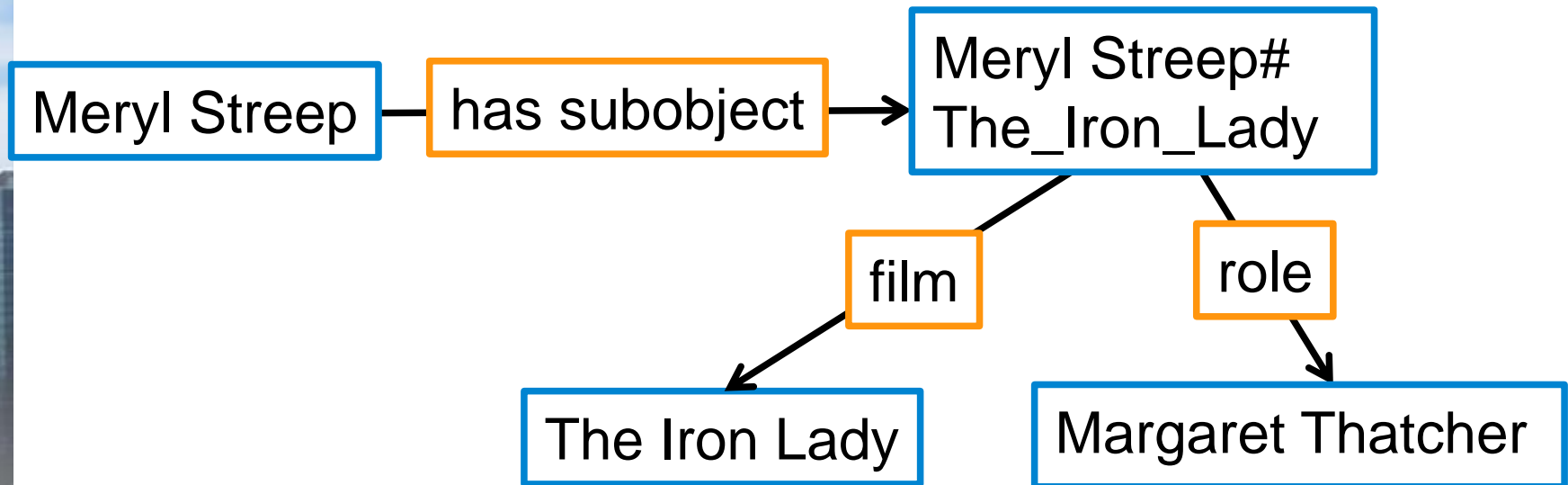
→ Structure is OK

→ But cumbersome encoding with auxiliary pages

- SMW supports the creation of “subobjects” of a page
- They can be named (optional), e.g.  
Meryl Streep#The\_Iron\_Lady
- Possible with #subobject parser function, e.g.

```
{{#subobject:The Iron Lady
|role=Margaret Thatcher
|film=The Iron Lady
}}
```

- This yields:



- Pointing from subobject to its page:

```
{{#subobject:The Iron Lady
...
|played by=Meryl Streep
}}
```

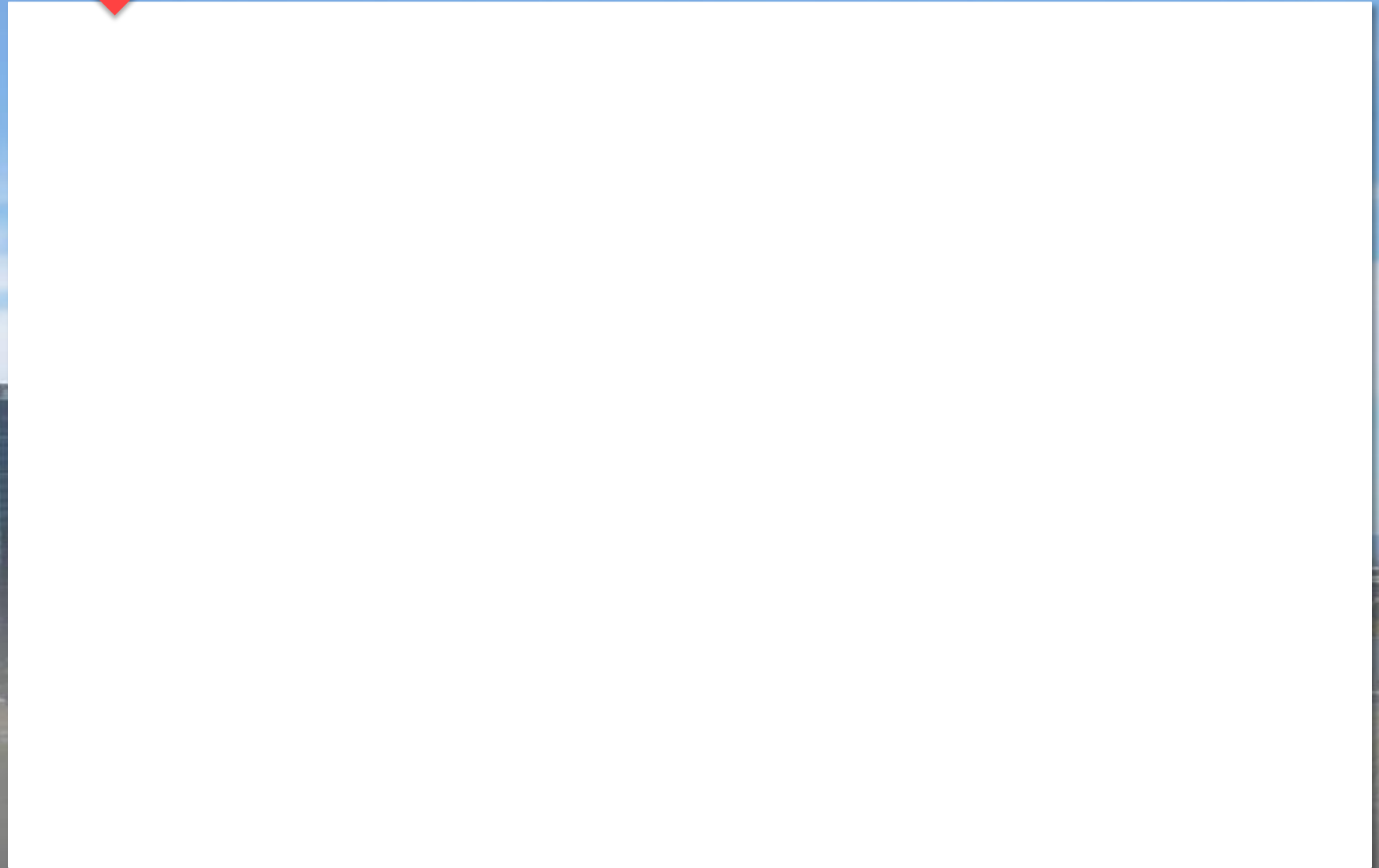
- Pointing from (any) page to subobject:

```
[[played::Meryl Streep#The Iron Lady]]
```

- One can leave away the name:

```
{{#subobject:
  |role=Margaret Thatcher
  |film=The Iron Lady
}}
```

- ... but then one cannot point to the subobject
- This is called an unnamed or anonymous subobject



- One can invert the direction of Wikipage properties:

```
{{#ask: [[has capital-::Germany]] }}
```

- Here “has capital-” has the meaning “is capital of”.
- This can be done in all SMW interfaces that take properties, but not when adding data to a page

- A more elaborate form of property values for Wikipages: the pages that match another query
- Example: “Countries with small capital cities”

```
{{#ask: [[has capital::  
<q>[[has population::<100,000]]</q> ]]]}}
```

- Property chains like this can be abbreviated:

```
{{#ask: [[has capital.has population::<100,000]] }}
```

- Think of query conditions as graphs:

